UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,472	09/23/2003	Ray W. Wood	029318-0976	9063

31049 7590 12/28/2006

ELAN DRUG DELIVERY, INC.
C/O FOLEY & LARDNER LLP
3000 K STREET, N.W.
SUITE 500
WASHINGTON, DC 20007-5109

EXAMINER	
HAGHIGHATIAN, MINA	
ART UNIT	PAPER NUMBER
1616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
2 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/667,472
Filing Date: September 23, 2003
Appellant(s): WOOD ET AL.

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/19/06 appealing from the Office action mailed 04/06/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,145,684 Liversidge et al 09-1992

Lacy et al, Drug Information Handbook pages 95-96 (LEXI_Comp, Inc.), 1993.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 10-22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liversidge et al (5,145,684) in view of Drug Information Handbook.

Liversidge et al teach dispersible particles consisting essentially of a crystalline drug substance having a surface modifier adsorbed on the surface thereof in an amount sufficient to maintain an effective average particle size of less than about 400 nm (see abstract and col. 1, lines 32-43). Liversidge discloses that the liquid media can be aqueous salt solutions, safflower oil and solvents such as ethanol, t-butanol, hexane and glycol. Suitable drugs include **corticosteroids**, such as steroid A. The surface modifiers can be selected from the group including non-ionic and anionic surfactants such as polyvinylpyrrolidone (see cols. 3-4).

Liversidge also discloses that the effective average particle size of less than 400 nm, or less than 100 nm is preferred. Also at least 99% of the particles have a particle size less than the effective average, eg. 400 nm (see col. 5, lines 26-40).

Liversidge teaches that the surface modifier can be present in an amount of 0. 1 to 90%, preferably 20-60% by weight based on the total weight of dry particles (col. 7, lines 15-20). Liversidge, while disclosing corticosteroids, such as steroid A as suitable active agents for nanoparticulate formulations, lacks specific disclosure of beclomethasone dipropionate.

Drug Information Handbook discloses **beclomethasone dipropionate** (a corticosteroid) as a suitable active agent for formulations for delivery into lungs or nasal passages.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, given the general formulations of Liversidge on formulations containing active agents including corticosteroids, to have looked in the art for other specific species of corticosteroids suitable for formation of compositions, as disclosed in Drug Information Handbook, with reasonable expectations of successfully preparing formulations comprising different active agents for treating different disorders.

(10) Response to Argument

Appellant disagrees with the rejection and believes that "there is no motivation to combine Liversidge and DIH". It is stated that there would be no reasonable expectation of success. Appellant also believes that they have rebutted "any *prima facie* case of obviousness by showing unexpected results" (page 4, Arguments). Appellant states that "there must be some suggestion or motivation to modify the references or to combine references". This is found unpersuasive. Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found **either** in the references themselves **or** in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed.

Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Liversidge is clearly teaching the surface modified nanoparticles and states that corticosteroids are a suitable class of drugs for the said formulations. It also has been shown that beclomethason dipropionate is a commonly used and well known corticosteroid, especially in the field of inhalers and have been made in powder forms for inhalation (see DIH). Thus, here, the motivation is provided by both the references and the common knowledge in the art.

Appellant states that "Liversidge discloses a lengthy list of classes of drugs, such as corticosteroids, and examples of some particular drug substances, such as Steroid A. However, Liversidge makes no mention of beclomethasone dipropionate". Appellant also argues that Drug Information Handbook does not remedy the said deficiency because there is no motivation to combine. This is not persuasive because in an obviousness rejection one prior art document is not required to recite all the limitation. Furthermore, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Appellant also argues that "it is not enough for the prior art to disclose beclomethasone as a corticosteroid, because some motivation to select the claimed species must be taught by the prior art". Here, the Examiner's position is that "some motivation" has come from the references. It was shown that beclomethasone is a

widely used corticosteroid and has been prepared in powder formulations for inhalation. Thus one of ordinary skill in the art would be motivated to look into those corticosteroids that have been used and are well known for their properties and functions in then same field.

Appellant states that "Liversidge warns against indiscriminate selection of drugs. Specifically, Liversidge teaches that -not every combination of surface modifier and drug substance provides the desired results of a stable nanoparticulate composition-". This is not commensurate with the scope of claims. Instant claims are drawn to "A nanoparticulate composition **comprising** beclomethasone dipropionate particles having an average particle size of less than 1000nm, and **at lest one** surface modifier". There are no specific surface modifying agents and no requirement of a "stable composition". There are also no exclusions. In fact claims 25-26 counteract Appellants disclosure, since these claims in addition to the scope of their parent claim 10, allow for many surface modifying agents to be used in the claimed formulation. In other words the combined references meet the scope and limitations of the instant claims.

Appellant states that they have "rebutted any prima facie case by showing an unexpected result". It is stated that Example 1 of the specification describes nanoparticulate formulations of beclomethasone and compares them to conventional particles. The finding is that "the use of nanoparticles led to a significantly higher fraction reaching the impactor" (see page 9). This is not persuasive because this is what Liversidge disclosed. Liversidge teaches that "this invention is based partly on the discovery that drug particles having an extremely small effective average particle size

can be prepared by wet milling in the presence of a surface modifier, and that such particles are **stable** and do not flocculate or agglomerate due to interparticle attractive forces and can be formulated into pharmaceutical compositions exhibiting **unexpectedly** high bioavailability (see col. 3, lines 15-31). Thus the advantage of nanoparticles, especially surface modified has been discovered by Liversidge.

Liversidge teaches what appears to be the instant invention, which is surface modified nanoparticulates. Liversidge also teaches that various active agents can be made into surface modified nanoparticulates including the class of corticosteroids and gives an example of a Steroid A. one of ordinary skill in the art can immediately envision a selection form the class of corticosteroids, since beclomethason dipropionate is a well known and widely used member of this class. Drug Information Handbook is used as a support to show that beclomethason dipropionate is indeed widely used and well known corticosteroid.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mina Haghighatian

Conferees:

Sreeni Padmanabhan

Supervisory Patent Examiner

Alton Pryor

Primary Examiner
A.U. 1616

SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER